

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
15 April 2004 (15.04.2004)

PCT

(10) International Publication Number  
**WO 2004/031444 A3**

- (51) International Patent Classification<sup>7</sup>: **G08B 13/24**,  
H01F 41/24 [GB/GB]; Qinetiq Limited, Cody Technology Park, Ively Road, Farnborough, Hampshire GU14 0LX (GB).
- (21) International Application Number:  
PCT/GB2003/004203
- (22) International Filing Date:  
29 September 2003 (29.09.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
0223018.3 4 October 2002 (04.10.2002) GB
- (71) Applicant (for all designated States except US): **QINETIQ LIMITED** [GB/GB]; Registered Office, 85 Buckingham Gate, London SW1E 6PD (GB).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **TOMKA, George, Jiri** [GB/GB]; Qinetiq Limited, Cody Technology Park, Ively Road, Farnborough, Hampshire GU14 0LX (GB). **PUGH, Rhian, Jenna** [GB/GB]; Qinetiq Limited, Cody Technology Park, Ively Road Farnborough, Hampshire GU14 0LX (GB). **JOHNSON, Daniel, Robert** [GB/GB]; Qinetiq Limited, Cody Technology Park, Ively Road, Farnborough, Hampshire GU14 0LX (GB). **GORE, Jonathan, Geoffrey** [GB/GB]; Qinetiq Limited, Cody Technology Park, Ively Road, Farnborough, Hampshire GU14 0LX (GB). **DAMERELL, William, Norman**
- (74) Agent: **RICHARDSON, Mark**; IP QinetiQ Formalities, Cody Technology Park, A4 Building, Room G016, Ively Road, Farnborough, Hampshire GU14 0LX (GB).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Declaration under Rule 4.17:**

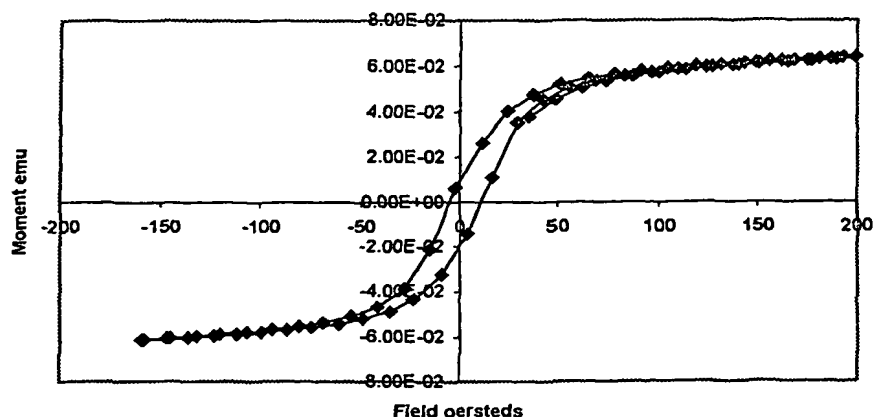
— of inventorship (Rule 4.17(iv)) for US only

**Published:**

— with international search report  
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

[Continued on next page]

(54) Title: METHOD OF FABRICATING A MAGNETIC TAG



(57) Abstract: Existing techniques for manufacturing multi-bit magnet tags are time consuming and/or incapable of producing highly defined magnetic elements. This invention provides method of fabricating a magnetic tag having a multiple number of information bits on its surface which method comprises forming some or all of the information bits by depositing magnetic material onto the surface by means of an electroless deposition reaction.



(88) Date of publication of the international search report:  
25 November 2004

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

## PATENT COOPERATION TREATY

PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

RESPONDING OFFICER			
DUE DATE			
15 OCT 2004			
INITIALS	DATE	INITIALS	DATE
SEARCHED			
INDEXED			

Applicant's or agent's file reference <b>IP/P7055/WOD</b>	<b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, Item 5 below.	
International application No. <b>PCT/GB 03/04203</b>	International filing date (day/month/year) <b>29/09/2003</b>	(Earliest) Priority Date (day/month/year) <b>04/10/2002</b>
Applicant <b>QINETIQ LIMITED</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 4 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

## 1. Basis of the report

- a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ Certain claims were found unsearchable (See Box I).

3. ☐ Unity of invention is lacking (see Box II).

4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No.

☒ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

3

☐ None of the figures.

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 03/04203

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G08B13/24 H01F41/24

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G08B H01F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	WO 90/07784 A (SCIENT GENERICS LTD) 12 July 1990 (1990-07-12) page 2, line 7 - line 30; claims	1,5,7 2-4,6, 8-11
X Y	----- EP 0 295 028 A (SCIENT GENERICS LTD) 14 December 1988 (1988-12-14) page 7, line 57 - page 8, line 1; figures 1,2 page 10, line 7 - line 28	1,5,7 2-4,6, 8-11
X Y	----- WO 99/53458 A (LIU ZHI HUI ; MXT INC (CA); RUDKOWSKI PIOTR (CA); STROM OLSEN JOHN (CA) 21 October 1999 (1999-10-21) claims	1,7 2-4
	----- -/--	

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

## \* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

5 October 2004

Date of mailing of the international search report

15/10/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Mauger, J

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 03/04203

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 00/33625 A (LOCHUN DARREN ; UNIV BRUNEL (GB); HARRISON DAVID (GB); RAMSEY BLUE JOH) 8 June 2000 (2000-06-08) claim 1 -----	2-4
Y	US 5 831 532 A (SCHROTT ALEJANDRO GABRIEL ET AL) 3 November 1998 (1998-11-03) cited in the application column 6, line 62 - column 7, line 29 -----	6,8-11
A	GB 2 312 595 A (FLYING NULL LTD) 29 October 1997 (1997-10-29) cited in the application the whole document -----	1-11

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 03/04203

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9007784	A	12-07-1990	AT 105649 T	15-05-1994
			AU 620198 B2	13-02-1992
			AU 4824890 A	01-08-1990
			BR 9004571 A	30-07-1991
			CA 2024608 A1	10-07-1990
			DE 69008789 D1	16-06-1994
			DE 69008789 T2	24-11-1994
			DK 412137 T3	06-06-1994
			EP 0412137 A1	13-02-1991
			WO 9007784 A1	12-07-1990
			JP 3504183 T	12-09-1991
			JP 2582942 B2	19-02-1997
			NO 903875 A	05-09-1990
			US 5368948 A	29-11-1994
			US 5582924 A	10-12-1996
EP 0295028	A	14-12-1988	AT 88294 T	15-04-1993
			AU 613045 B2	25-07-1991
			AU 1746388 A	08-12-1988
			BR 8802873 A	03-01-1989
			CA 1291244 C	22-10-1991
			DE 3855645 D1	12-12-1996
			DE 3880202 D1	19-05-1993
			DE 3880202 T2	05-08-1993
			DK 58089 A	08-02-1989
			DK 171570 B1	13-01-1997
			EP 0295028 A1	14-12-1988
			EP 0295085 A1	14-12-1988
			ES 2040343 T3	16-10-1993
			WO 8809979 A1	15-12-1988
			JP 1064207 A	10-03-1989
			JP 2643312 B2	20-08-1997
			JP 1503577 T	30-11-1989
			NO 882504 A ,B,	09-12-1988
			US 4960651 A	02-10-1990
			US 4940966 A	10-07-1990
WO 9953458	A	21-10-1999	CA 2234760 A1	15-10-1999
			AU 3134099 A	01-11-1999
			WO 9953458 A1	21-10-1999
WO 0033625	A	08-06-2000	AU 762686 B2	03-07-2003
			AU 1574600 A	19-06-2000
			CA 2350506 A1	08-06-2000
			CN 1335045 T	06-02-2002
			EP 1142456 A1	10-10-2001
			WO 0033625 A1	08-06-2000
			JP 2002531961 T	24-09-2002
			ZA 200104489 A	22-05-2002
US 5831532	A	03-11-1998	US 5729201 A	17-03-1998
GB 2312595	A	29-10-1997	US 5965214 A	12-10-1999